

WHAT IS CLAIMED IS:

4b1 1. A method of cleaning a semipermeable membrane, said semipermeable membrane being configured for carrying a fiber web, said method comprising the steps of:

- 5 providing a cleaning fluid;
- applying said cleaning fluid on said semipermeable membrane;
- providing an air press, said air press being configured for carrying said semipermeable membrane therethrough, said air press having pressurized air therein;
- conveying said semipermeable membrane through said air press; and
- subjecting said semipermeable membrane to said pressurized air within said air press, said pressurized air thereby flushing said cleaning fluid through said semipermeable membrane.

2. The method of claim 1, wherein said cleaning fluid is comprised of at least one of an anionic detergent, a cationic detergent, a surfactant, a soap, a solvent and a solvent mixture.

3. The method of claim 2, wherein said cleaning fluid further includes water.

4. The method of claim 1, wherein said cleaning fluid is applied at least one of inside and outside of said air press.

5. The method of claim 1, wherein said applying step includes at least one of blade-coating said cleaning fluid on said semipermeable membrane; spraying said cleaning fluid on said semipermeable membrane; and applying said cleaning fluid on a roll and transferring said cleaning fluid from said roll onto said semipermeable membrane.

6. The method of claim 5, wherein said applying step includes spraying said cleaning fluid in a manner so as to form a divergent spray thereof.

3b32 7. The method of claim 1, wherein said air press includes a plurality of rolls, one of said rolls being a cap roll, said applying step including the substeps of:

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applying said cleaning fluid on said cap roll; and
transferring said cleaning fluid from said cap roll onto said semipermeable membrane.

8. The method of claim 1, wherein said air press is one of a multiple-roll cluster arrangement and a box arrangement, each of said multiple-roll cluster arrangement and said box arrangement defining a pressurized chamber, said pressurized chamber having said pressurized air therein.

9. The method of claim 1, wherein a flushing pressure of said pressurized air on said semipermeable membrane is greater than approximately atmospheric pressure.

10. The method of claim 9, wherein said flushing pressure is greater than approximately 2 bar.

11. The method of claim 10, wherein said flushing pressure is greater than approximately 5 bar.

12. The method of claim 1, wherein said air press is a cleaning press used for cleaning said semipermeable membrane.

3bB3 13. ~~The method of claim 12, wherein said cleaning press is further configured for at least one of impregnating and coating the fiber web carried by said semipermeable membrane.~~

14. The method of claim 12, further comprising the steps of:
providing a second air press, said semipermeable membrane having a membrane direction of travel, said second air press being located after said cleaning press in said membrane direction of travel;

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carrying said semipermeable membrane through said second air press; and
dewatering said semipermeable membrane within said second air press.

15. The method of claim 14, wherein said cleaning press and said second air press conjunctively form a two-chamber cluster arrangement.

16. The method of claim 14, wherein each of said first air press and said second air press have at least one vented member associated therewith, said pressurized air in said cleaning press forcing cleaning fluid toward one said at least one vented member associated therewith, said pressurized air in said second air press forcing water toward one said at least one vented member associated therewith.

17. An apparatus for cleaning a semipermeable membrane, said semipermeable membrane being configured for carrying a fiber web, said apparatus comprising:

a source of a cleaning fluid;

an applicator configured for applying said cleaning fluid to said semipermeable

membrane; and

an air press configured for carrying said semipermeable membrane therethrough, said air press having pressurized air therein, said air press thereby being configured for flushing said cleaning fluid through said semipermeable membrane.

18. The apparatus of claim 17, wherein said cleaning fluid is comprised of at least one of an anionic detergent, a cationic detergent, a surfactant, a soap, a solvent and a solvent mixture.

19. The apparatus of claim 17, wherein said applicator is one of a blade coater, a spray device, and a transfer coater.

3, b B4 20. The apparatus of claim 19, wherein said air press includes a plurality of rolls, one of said rolls being a cap roll, said applicator being said transfer coater, said cap roll functioning as a transfer roll of said transfer coater.

21. The apparatus of claim 17, wherein said air press is one of a multiple-roll cluster arrangement and a box arrangement, each of said multiple-roll cluster arrangement and said box arrangement defining a pressurized chamber, said pressurized chamber having said pressurized air therein.

3/2 B5 22. The apparatus of claim 17, wherein said air press is a cleaning press used for cleaning the semipermeable membrane, said apparatus further comprising a second air press, the semipermeable membrane having a membrane direction of travel, said second air press being located after said cleaning press in the membrane direction of travel.

23. An apparatus for cleaning a semipermeable membrane, said semipermeable membrane being configured for carrying a fiber web, said apparatus comprising:

a source of a cleaning fluid;

an applicator configured for applying said cleaning fluid to said semipermeable

5 membrane; and

a press configured for pressing said semipermeable membrane and for thereby flushing said cleaning fluid therethrough.

24. A papermaking machine, said machine comprising:

a semipermeable membrane, said semipermeable membrane being configured for carrying a fiber web;

a plurality of conveyor rolls, each conveyor roll configured for carrying at least one of
5 said semipermeable membrane and said fiber web;

a source of a cleaning fluid;

an applicator configured for applying said cleaning fluid to said semipermeable membrane; and

an air press configured for carrying said semipermeable membrane therethrough, said air
10 press having pressurized air therein, said air press thereby being configured for flushing said cleaning fluid through said semipermeable membrane.